

TRACTOR INTER-ROW CULTIVATION



Upper—A 4-row seeder. Lower—A light tractor fitted with tractor inter-row cultivating equipment.

wheel hoes. However, to allow the free movement of equipment on an area being cultivated by tractors it is necessary to increase the width to between 18 and 21in. The yield from crops grown in 21in. rows is about 40 per cent. lower than that from crops grown in 12in. rows. Crops producing 15 to 16 tons an acre off 12in. rows will give about 10 tons off 21in. rows.

Excellent Opportunity for Test

At the Patumahoe project of the Services' Vegetable Production Scheme, an area of 900 acres of medium to heavy volcanic soil, a full range of tractors and inter-row equipment gave an excellent opportunity to investigate the possibilities of tractor inter-row cultivation of crops grown in 21, 30, and 42in. rows. Furthermore, the areas in crop at Patumahoe were so large and the shortage of labour so acute that every endeavour had to be made to use mechanical cultivation wherever possible.

Advantages of Tractor Cultivation

The chief advantages of tractor cultivation were found to be:—

1. Saving in time.
2. Saving in labour.
3. Deeper cultivation.
4. More frequent cultivation.

Saving in Time and Labour: It was found that a light tractor working in 21in. rows in such crops as carrots, onions, and beetroot cultivated about 1 acre in an hour, but a man with a hand wheel hoe took about 8 hours to cultivate the same area planted in 21in. rows. The cultivation of such crops as cabbage, cauliflower, and potatoes, which are grown in 30in. and 42in. rows, was generally done by a heavier and more highly-powered tractor which could cultivate $1\frac{1}{2}$ acres an hour.

Deeper Cultivation: The advantage of deep cultivation is apparent on heavy soils like those at Patumahoe. A wet season packs and consolidates this type of soil to such a degree that ordinary hand methods of cultivation are of little use. The beneficial effect that deep and efficient inter-row cultivation had in crops grown under these conditions was most noticeable.

More Frequent Cultivation: Cultivation by tractor can be carried out more frequently because of the rapidity with which a tractor can cultivate large areas, and also because the tractor can be used continuously during rush periods or long hours of work, requiring only a change of drivers. The success of many a crop has depended on whether other jobs could be finished in time to allow attention to be given to it. If shortage of labour and time causes neglect, the crop, if not totally lost, will give such a poor return that in some cases it will not pay for the cost of planting it.